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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,512	08/19/2003	Timothy W. Kaufmann	DP-307433/DP-309396	4499

7590 08/12/2004  
KEITH J. MURPHY  
CANTOR COLBURN LLP  
55 Griffin Road South  
Bloomfield, CT 06002

EXAMINER

BASINGER, SHERMAN D

ART UNIT	PAPER NUMBER
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3617

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/643,512

**Applicant(s)**

KAUFMANN ET AL.

**Examiner**

Sherman D. Basinger

**Art Unit**

3617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-92 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☒ Claim(s) 3-8, 11, 12, 15-19, 22, 25, 29, 30, 35-37, 45-48, 50, 53-55, 59, 61, 65, 77, 82, 85 and 89 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/11/03&8/19/03
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_

Continuation of Disposition of Claims: Claims rejected are 1,2,9,10,13,14,20,21,23,24,26-28,31-34,38-44,49,51,52,56-58,60,62-64,66-76, 78-81,83,84,86-88 and 90-92.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. Page 3 of the information disclosure statement filed August 19, 2003 is unclear. In copying or submitting page 3 of the information disclosure statement filed August 19, 2003, the first half of the page was left blank.

### ***Specification***

2. The disclosure is objected to because of the following informalities: on page 1 of the specification that serial number 10/349601 is now abandoned should be inserted in line 4 and on page 13, line 22 "334" should be -324-.

Appropriate correction is required.

### ***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the watercraft mode selector of claims 42 and 49 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

4. Claims 1 and 40 are objected to because of the following informalities: in claim 1, line 6 the semi-colon after "of" should be deleted; in claim 40, line 9, a semi-colon should be inserted after "signal"; and the semi-colon at the end of line 40 should be a period. Appropriate correction is required.
5. Claim 41 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. All of the subject matter in claim 41 can be found in parent claim 1.
6. Claims 59, 61 and 65 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 15, 17 and 18 respectively. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a

Art Unit: 3617

slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 42, 49, 69 and 75 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant has failed to describe in detail in such a way as to reasonably convey to one skill in the relevant art that the inventors, at the time the application was filed, had possession of the watercraft steer by wire control system including a watercraft mode selector for producing a mode selection signal and wherein said position control process is responsive to said mode selection signal; the watercraft steer-by-wire control system wherein said variable steering ratio is response to at least one of the helm position signal, a helm torque signal, a watercraft speed signal, and a *watercraft mode selector for producing a mode selection signal*; and the method for steering a watercraft comprising calculating and producing a variable steering ratio signal in response to at least one of a helm position signal, a helm torque signal, a watercraft speed signal, and a *watercraft mode selector for producing a mode selection signal* 1.

Art Unit: 3617

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 23, 24, 26, 31, 32, 34, 38, 39, 43, 44, 49, 51, 52, 56, 60, 62, 63, 64, 66, 68, 71, 72, 73, 74, 76, 78, 79, 80, 81, 83, 84, 86-88, and 90-92 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 23 "said damping torques command signal" has no clear antecedent.

In claim 24 "said compensated torque command signal" has no clear antecedent.

In claim 26 "said variable steering ratio signal" has no clear antecedent.

In claim 31 "a direction control system" is a double inclusion of "a direction control system" of parent claim 20.

In claim 32 "said position command signal" has no clear antecedent.

In claim 34 "said rudder control unit" and "said position command signal" have no clear antecedents.

In claim 38 "The storage medium" has no clear antecedent.

In claim 39 "The computer data signal" has no clear antecedent.

In claim 43 "said rudder control system" has no clear antecedent and "a torque control process" is a double inclusion having already been claimed in claim 1.

In claim 44 "a torque sensor" and "a torque control process" are double inclusions from parent claim 1 and "said helm command signal" has no clear antecedent.

In claim 49 "said variable steering ratio" has no clear antecedent.

Art Unit: 3617

In claim 51, "said theta corrected directional command signal" has no clear antecedent and "a helm torque signal" is a double inclusion.

In claim 52 "said tactile feedback" has no clear antecedent.

In claim 56 "said torque command signal" has no clear antecedent.

In claim 60 "said rudder control unit" and "said position command signal" have no clear antecedents.

Claims 62-64 are unclear because each is an apparatus claim depending from a method claim.

In claim 63 "said lateral thruster" has no clear antecedent.

Claim 66 is an apparatus claim depending from method claim 26 and is, therefore, unclear.

In claim 66 "said trim tab" has no clear antecedent.

Claim 68 includes the step of "receiving a watercraft speed signal" for a second time.

This step is already claimed in parent claim 20.

Claim 71 includes the step of "receiving a helm torque signal" for a second time. This step is already in parent claim 20.

In claim 72 "said helm command signal" has no clear antecedent.

In claim 73 "said damping torque command signal" has no clear antecedent.

In claim 74 "said helm command signal" and "said compensated torque command signal" have no clear antecedents.

In claim 76 "said variable steering ratio signal" has no clear antecedent.



Art Unit: 3617

In claim 78 "a helm control system" is a double inclusion as parent claim 20 already claims "a helm control system".

Claims 80, 83, 84, 86, 87, 88 and 90 are method claims depending from an apparatus claim and are, therefor, unclear.

In claim 80 "said torque command signal" has no clear antecedent.

In claim 81 "a direction control system" is a double inclusion as parent claim 20 already defines "a direction control system".

In claims 83 and 84 "said rudder control unit" and "said position command signal" have no clear antecedents.

In claim 86 "said at least one of said port command and said starboard command" has no clear antecedent.

In claim 90 "said trim tab" has no clear antecedent.

In claim 91 "The storage medium encoded with a machine readable computer program code" has no clear antecedent.

In claim 92 "The computer data signal for steering a watercraft" has no clear antecedent.

### ***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent

Art Unit: 3617

granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 40, 67, 91 and 92 are rejected under 35 U.S.C. 102(b) as being anticipated by Dimmick et al when in the third mode. Note helm wheel 19, digital computer 15 and rudder and helm angle indicator 55.

13. Claim 67 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Cognevich, Sr. et al.

14. Claims 1, 2, 9, 10, 13, 14, 20, 21, 28, 31, 38-44, 57, 58, 67, 68, 70, 71, 78, 81, 91 and 92 are rejected under 35 U.S.C. 102(e) as being anticipated by Andonian et al. First of all note column 2, lines 9-13.

In view of the above lines, Andonian et al discloses a watercraft steer-by-wire control system

comprising:

a direction control system 14 responsive to a directional command signal 16 for steering a watercraft, said direction control system including a rudder position sensor (see column 2, line 64) to measure and transmit a rudder position signal;

a helm control system 12 responsive to a helm command signal for receiving a directional input to a helm from an operator 34 and providing tactile feedback 35 to an operator, said helm control system including at least one of a helm position sensor to produce and transmit a helm position signal and a

Art Unit: 3617

torque sensor to produce and transmit a helm torque signal (see column 2, lines 16-18);  
a watercraft speed sensor (see column 3, line 44) for producing a watercraft speed signal;

a master control unit 16 in operable communication with said watercraft speed sensor, said helm control system, and said direction control system;

said master control unit includes a position control process for generating said directional command signal in response to said watercraft speed signal, said helm torque signal and said helm position signal; and  
said master control unit includes a torque control process for generating said helm command signal based on said helm torque signal, said helm position signal and said watercraft speed signal (see column 4, lines 5-10).

In view of column 2, lines 10-13, Andonian also discloses a method for directing a watercraft with a

watercraft steer-by-wire system comprising:

receiving a watercraft speed signal (see column 3, line 44);

receiving a helm position signal (see column 2, lines 17 and 18);

receiving a helm torque sensor signal (see column 2, lines 17 and 18);

receiving a rudder position signal (see column 2, lines 60-65);

generating a helm command signal 35 to a helm control system

based on said helm torque signal, said helm position signal, and said watercraft speed signal to provide tactile feedback to an operator; and

Art Unit: 3617

generating a directional command signal 36 to a direction control system based on said watercraft speed signal, said rudder position signal, and said helm position signal to control direction of said watercraft.

With regard to claims 2 and 43, see column 3, line 2.

The closed loop control system of claim 9 is shown in figure 2.

What is defined in claim 10 and the other claims with the same or similar limitations is an inherent feature of the system of Andonian et al that is needed in order for it to be operative.

With regard to claim 14, see figure 2.

***Allowable Subject Matter***

***Allowable Subject Matter***

15. Claims 3-8, 11, 12, 15-19, 22, 25, 29, 30, 35-37, 45-48, 50, 53-55, 59, 61, 65, 77, 82, 85 and 89 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. Claims 23, 24, 26, 27, 32-34, 51, 52, 56, 60, 62-64, 66, 72-74, 76, 79, 80, 83, 84, 86-88 and 90 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

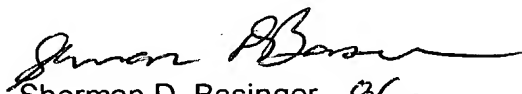
**Conclusion**

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Michaelson et al is cited to point out what is disclosed in column 6, lines 45-end and column 7, lines 1-18. Buckeley et al is cited to show a marine vessel steered by wire.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sherman D. Basinger whose telephone number is 703-308-1139. The examiner can normally be reached on M-F (6:00-2:30 ET).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samuel J. Morano can be reached on 703-308-0230. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Sherman D. Basinger  
Primary Examiner  
Art Unit 3617  
9/5/04

Application/Control Number: 10/643,512

Page 12

Art Unit: 3617

8/5/04